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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,579	12/18/2000	Tomoko Ishikawa	199648US0	9891

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EXAMINER

NOTE, JANIS L

ART UNIT PAPER NUMBER

1756

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/737,579

Applicant(s)

ISHIKAWA et al

Examiner

J. DOTE

Group Art Unit

1756

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 9/24/03
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-43, 45-67 is/are pending in the application.
- Of the above claim(s) 1-26, 31, 33, 35, 36, 39, 41, 43, 45-56 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 57-67 is/are rejected.
- ☒ Claim(s) 27-30, 32, 34, 37, 38, 40, 42 is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☒ All ☐ Some* ☐ None of the:

☒ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received

in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Sep. 4, 2003, has been entered.

2. The examiner acknowledges the amendments to the specification filed in Paper No. 18 on Sep. 4, 2003. The examiner also acknowledges the amendment to claim 27, the cancellation of claim 44, and the addition of claims 57-67, filed in Paper No. 20 on Sep. 24, 2003. Claims 1-43 and 45-67 are pending.

The amendment filed after the final rejection in Paper No. 15 on Jul. 29, 2003, was entered upon the filing of the RCE, as requested by applicants in the RCE. However, the amendment to the claims was not in compliance with 37 CFR 1.121, for the reasons discussed in the "Notice of Non-Compliant Amendment" mailed on Sep. 15, 2003, Paper No. 19. The amendment to the claims in Paper No. 15 has not been entered.

3. Claims 1-26, 31, 33, 35, 36, 39, 41, 43, and 45-56 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicants timely traversed the restriction (election) requirement in Paper No. 10 filed May 30, 2002.

4. The objection to the specification set forth in the office action mailed on Apr. 4, 2003, Paper No. 14, paragraph 4, has been withdrawn in response to the amendments to the specification filed in Paper No. 18.

The rejections of claims 27-30, 32, 34, and 40 under 35 U.S.C. 102(e)/103(a) over US 2002/0028402 A1 (Matsuoka), and of claims 37, 38, and 42 under 35 U.S.C. 103(a) over Matsuoka combined with the other cited prior art, set forth in Paper No. 14, paragraphs 7-10, have been withdrawn in response to the amendment to claim 27, adding the limitation of now-canceled claim 44 that the toner has a 50% circular degree of from 0.95 to 1. Matsuoka, alone nor combined with the other cited references, does not disclose or suggest toners having such a circular degree as recited in instant claim 27.

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 57-67 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Instant claim 57 and claims 58-68, which depend from claim 57, recite that the binder resin comprises units from a monomer having a Bronsted acid group or a Bronsted basic group. Applicants assert that the binder resin is supported by "original Claim 17 [sic: 16] and the specification at page 14, line 20 ff."

However, the originally filed specification does not provide an adequate written description the binder resin recited in instant claim 57. Originally filed claim 16, which depends from claim 1, recites a toner comprising an agglomerate of particles comprising primary polymer particles and colorant particles, and a layer of a particulate resin coated on a substantial surface portion of said agglomerate of particles, wherein at least one of the primary particles and said particulate resin further comprises a wax, and the "primary polymer particles comprise units from a monomer having a Bronsted acidic group or a Bronsted

basic group" (emphasis added). The specification at page 14, line 20 ff, discloses primary polymeric particles obtained by emulsion polymerization using a particulate wax as a seed, wherein "[i]n order to effect seed polymerization, a monomer having a Bronsted acidic group . . . or a monomer having a Bronsted basic group . . . and a monomer having neither a Bronsted acidic group nor a Bronsted basic group . . . are successively added to cause polymerization in the emulsion containing particulate wax." Instant claim 57 does not recite that the toner is an agglomeration of primary polymer particles and colorant particles, where the surface of the agglomeration is coated with a particulate resin. The toner particles recited in instant claim 57 are broader than the disclosed agglomeration of primary polymer particles because they include toner particles obtained by a melt-kneading process coated with a resin layer, and binder resins obtained by condensation polymerization such as a polyester resin obtained reacting the monomer fumaric acid with a diol monomer. There is no description of a generic binder resin made from Bronsted acid or basic monomers. Applicants' description of "primary polymer particles" and agglomerates having a layer of particulate resin, where the primary polymer particles are made from Bronsted acid or basic monomers, does not suffice as a description of the general concept.

7. Claim 27, claims 28-30, 32, 34, 37,38, 40, and 42, which depend from claim 27, claim 57, and claims 58-67, which depend from claim 57, are objected to because of the following informalities:

In claims 27 and 57, the terminal period "." after the phrase "to a depth of 0.1 μm " should be replaced with a semicolon.

Appropriate correction is required.

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 57-62 and 65 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 2002/0028402 A1 (Matsuoka).

Matsuoka discloses a negatively chargeable toner comprising toner particles comprising a binder resin, a colorant, and paraffin wax. See Table 2, the yellow toner of example 1, and paragraph 0126. The binder resin comprises a linear and non-linear polyester resins. The linear polyester resin is obtained by reacting polyoxypropylene(2,2)-2,2-bis(4-hydroxyphenyl)propane and fumaric acid. The fumaric acid comprises two carboxylic acid moieties, which are Bronsted acid groups. Thus, the linear polyester resin meets the binder resin limitation recited in instant claim 57, wherein the binder resin comprises units of a

monomer having a Bronsted acid group. The paraffin wax has a melting point of 85°C, which is within the range of 30 to 100°C recited in instant claim 61. The wax is present in an amount of 4.95 wt% based on the weight of the binder resin. The amount of 4.95 wt% is within the range of from 1 to 35 parts recited in instant claim 62. (The amount of 4.95 wt% is determined from the data presented at paragraph 0115.) The toner has a volume-average particle size of 7.8 μm , which is within the range of from 4 to 10 μm recited in instant claim 59. The wax is dispersed in the binder resin having a dispersed particle size (or diameter) of 0.8 μm . The particle size of 0.8 μm is within the particle size ranges recited in instant claims 58 and 60. The wax particles are present on the surface of the toner particles in an amount of 4.2 wt% based on the total weight of the wax present in the toner. See Table 2. This amount of 4.2 wt% corresponds to an amount of 0.21 wt% of wax particles based on the total weight of the binder resin. The surface of the toner particles is defined as a layer extending from the top of the toner particle to a depth of 0.1 μm as shown as d_2 in Fig. 2. Paragraph 0059.

Matsuoka does not explicitly disclose that the releasing agent particles have a half-width of 0.06 μm or less. Nor does Matsuoka disclose that the wax particles are present in the toner in the ratio recited in instant claim 57. However, as discussed

above, the amount of wax particles present in the toner particles within the surface of the toner particles to a depth of $0.1\ \mu\text{m}$ is 4.2 wt% based on the total weight of wax present in the toner particles, which corresponds to an amount of 0.21 wt% based on the total weight of the binder resin. The amount of wax present in the toner particles outside of the surface layer is about 4.74 wt% based on the weight of the binder resin. As seen in Fig. 2, the number of particles of releasing agent in the surface layer of $0.1\ \mu\text{m}$ is much less than the number of particles at a depth of $0.1\ \mu\text{m}$ and more.

In addition, the instant specification at page 49, lines 4-11, discloses that when the toner particles of the invention are made by agglomerating and fusing resin encapsulated wax particles, the wax particles in the resulting toner particles are "considered substantially to maintain the particle diameter at a time when present" in the resin encapsulated wax particles. In other words, the wax particles dispersed in the toner particles have the same or substantially the same particle size as the wax particles present in the resin encapsulated wax particles before agglomeration and fusion. The instant specification also shows that toner particles made by agglomerating and fusing said resin encapsulated wax particles can comprise wax particles having a half-width number-average particle size of $0.06\ \mu\text{m}$ or less and dispersed in the toner

particles as recited in instant claim 57. Instant specification, example 1. Such toner particles can be fixed over a temperature range of 130 to 220°C, have excellent antiblocking characteristics, and provide OHP transparencies having a transmission of 70%. Specification, table at page 132, example 1.

Matsuoka discloses that the initial wax particles used to make his toner particles have an initial average particle size of 0.81 μm . Paragraph 0113, line 15. As discussed above, the average wax dispersion particle size in Matsuoka's toner particles is 0.80 μm . See Table 2, yellow toner. Matsuoka discloses that his toner particles provide OHP transparencies having a transmission of 80%, have good anti-thermal blocking characteristics, and can be fixed from a range of 130 to 200°C without offset. See Table 3, yellow toner. In summary, Matsuoka's toner (1) meets the compositional limitations and physical limitations (toner and wax average particle sizes) recited in the instant claims, (2) has a small relative amount of wax particles in the surface layer of 0.1 μm of the toner particles, (3) is made by a method where the particle size of the wax particles dispersed in the toner particles is substantially the same as the particle size of the initial wax particles used in making the toner particles, and (4) appears to have properties that are similar or substantially similar to those of toner

particles comprising wax particles that meet the particle size distribution and location limitations recited in instant claim 57. Accordingly, it is reasonable to presume that Matsuoka's wax particles dispersed in the toner particles have the particle size distribution and location limitations recited in instant claim 57. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

10. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka combined with US 5,213,932 (Shimazaki).

Matsuoka discloses a toner as described in paragraph 9 above, which is incorporated herein by reference.

Matsuoka does not exemplify a toner comprising a magenta colorant as recited in the instant claim. However, the reference discloses that its toner may comprise a magenta color. Matsuoka, paragraph 0066.

Shimazaki discloses a magenta colorant comprising a mixture of 40 to 60 parts by weight of rhodamine dye C.I. Solvent Red 49 and 60 to 40 parts by weight of C.I. Pigment Red 48, compound (2). Shimazaki, col. 2, line 55, to col. 3, line 11. Compound (2) meets the limitations of formula (1) recited in instant claim 63. Shimazaki discloses that toners comprising said magenta colorant have good weatherability properties, such as good light fastness and heat-resistance. Shimazaki also

discloses that said toners provide clear magenta toner images and satisfactory hue. Col. 1, lines 51-55, and col. 4, lines 54-55.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Shimazaki, to use Shimazaki's magenta colorant as the colorant in the toner disclosed by Matsuoka, because that person would have had a reasonable expectation of successfully obtaining a magenta toner having the benefits disclosed by Shimazaki.

11. Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka combined with Japanese Patent 59-165069 (JP'069), as evidenced by the USPTO English-language translation of JP'069.

Matsuoka discloses a toner as described in paragraph 9 above, which is incorporated herein by reference.

Matsuoka does not disclose the use of a magenta colorant as recited in the instant claims. However, the reference discloses that its toner may comprise a magenta color. Matsuoka, paragraph 0066.

JP'069 discloses a magenta colorant that meets the limitations of formula (2) recited in instant claim 64. Translation, page 4, line 5. JP'069 discloses that toners comprising said magenta colorant have the required characteristic for color electrophotography, e.g, high transparency, and provide

stable images to heat and light. See JP'069, table at page 525; example 1; and translation, pages 5-6.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'069, to use JP'069's magenta colorant as the colorant in the toner disclosed by Matsuoka, because that person would have had a reasonable expectation of successfully obtaining a magenta toner having the benefits disclosed by JP'069.

12. Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka combined with US 5,547,802 (Kawase).

Matsuoka discloses a toner as described in paragraph 9 above, which is incorporated herein by reference.

Matsuoka does not disclose that his toner particles have a ratio of volume-average particle diameter to number-average diameter as recited in instant claim 66.

Kawase discloses that in order to obtain images with excellent dot reproduction and sharpness, it is preferable that the volume mean diameter (Dv) of the toner particles be in the range of 3 to 9 μm , and that the ratio (Dv/Dp) of the volume mean particle diameter (Dv) to the number-average particle (Dp), be in the range of 1.00 to 1.15. Col. 18, lines 50-54. As discussed in paragraph 5 above, Matsuoka's toner particles have a volume-

average particle size of 7.8 μm , which is within the teachings of Kawase.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kawase, to adjust through routine experimentation the particle size of Matsuoka's toner particles such that Matsuoka's toner particles have a ratio of D_v/D_p of from 1 to 1.15 that meets the limitation recited in instant claim 66, because that person would have had a reasonable expectation of successfully obtaining a toner that provides images with excellent dot reproduction and sharpness.

13. Applicants' arguments filed in Paper No. 15 with respect to the rejections over Matsuoka set forth in paragraphs 9-12, supra, have been fully considered but they are not persuasive.

Applicants' arguments that the "half value width" of Matsuoka's wax particles is much larger than 0.06 μm have been addressed in Paper No. 14, paragraph 11, which is incorporated herein by reference.

Applicants further argue that "[w]hile Matsuoka . . . may disclose that the number of particles of releasing agent in the surface layer up to 0.1 μm is much less than the number of particles at a depth of 0.1 μm or more, but there is no reason to believe that the above-discussed ratio is satisfied." Applicants further argue that Matsuoka does not disclose a method or

producing a toner having a releasing agent content in the outermost layer of the toner, less than that of the remainder.

The reason to shift the burden to applicants to show that the "above discussed ratio" is satisfied, is, as discussed in the rejection in paragraph 9, supra, that the yellow toner in Matsuoka's example 1 appears to have properties that are similar or substantially similar to those of toners that meet the particulate wax particle size distribution and location limitations recited instant claim 57. Specifically, Matsuoka's yellow toner can be fixed over a temperature range of 130 to 200°C, has good antiblocking characteristics, and provides OHP transparencies having a transmission of 80%. Moreover, Matsuoka's fixing temperature range was determined using an oil-less fixing device that is similar to the fixing device used in example 1 of the instant specification. See the instant specification, page 56, lines 3-14. Applicants teach that these properties are a result of the size and location distribution of the particulate wax. Having found a reference that teaches a similar toner, having similar components and similar properties, and being unable to test the toner, the examiner has properly shifted the burden to applicants, who are in the best position to resolve the matter by conducting test. Furthermore, there is no objective evidence on the present record showing that the yellow

toner in Matsuoka's example 1 does not possess the ratio of particulate wax recited in instant claim 57.

Thus, for the reasons discussed above and in the rejection in paragraph 9 above, applicants have not shown that the yellow toner in Matsuoka's example 1 does not have the wax particulate particle size distribution and the location limitations recited in instant claim 57. Accordingly, the rejections over Matsuoka stand.

14. Claims 27-30, 32, 34, 37, 38, 40, and 42 would be allowable if rewritten or amended to overcome the objection set forth in this Office action.

The claims are allowable over the prior art of record for the reasons discussed in paragraph 4, supra.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (703) 308-3625. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (703) 308-2464. The central fax phone number is (703) 872-9306.

Any inquiry of papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Palestine Jenkins, whose telephone number is (703) 308-3521.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

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Janis L. Dote
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PRIMARY EXAMINER
GROUP 1500
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JLD
November 16, 2003